



SHERWIN-WILLIAMS.

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June 5, 2006

Mr. Ray Klimcsak
U.S. Environmental Protection Agency – Region 2
290 Broadway 19th Floor
New York, New York 10007-1866

**RE: Proposed Change of Analytical Methods
RI/FS Activities - Gibbsboro, New Jersey**

Dear Mr. Klimcsak:

In preparation for the upcoming Phase II Remedial Investigation (RI) for the Remainder of Hilliard Creek Transects, Hilliard Creek Residential Properties, and Residential Well Sampling, The Sherwin-Williams Company (Sherwin-Williams) would like to discuss and clarify some issues related to the analytical methods documented in the November 2003 *Revised Work Plan For RI/FS Activities, Gibbsboro, New Jersey, Quality Assurance Project Plan (QAPP)*. Based upon the United States Environmental Protection Agency (EPA) concurrence (May 3, 2006 EPA letter to Sherwin-Williams) with limiting the list of Constituents of Potential Concern (COPCs) for future sampling along Hilliard Creek transects (soil and sediment samples) to Target Analyte List (TAL) metals, polycyclic aromatic hydrocarbons (PAHs) and polychlorinated biphenyl (PCB) and based upon the planned sampling at residential potable wells, Sherwin-Williams is proposing the use of alternate methods for some of the analyses. Sherwin-Williams is requesting alternative EPA methods for PCB analysis of sediment and soil samples, and VOC analysis of potable water samples.

During the Strategic Sampling Implementation Program in 2005, samples were analyzed using OLM04.2 for organics and ILM04.1 for inorganics. In order to maintain consistencies with data collected in 2005, Sherwin-Williams is proposing to continue using OLM04.2 for organic analytes under the Target Compound List (TCL) and ILM04.1 for inorganic analytes under the TAL, however, we are requesting EPA approval for the following modifications:

- using SW-846 method 8082 to analyze polychlorinated biphenyl (PCB); and
- using EPA method 524.2 to analyze volatile organic compounds (VOCs) in groundwater samples collected from the residential wells.

Method 8082

To analyze PCBs, the soil and sediment samples will be prepared by ultrasonic extraction (SW-846 method 3550B) and the extracts will be subjected to a sulfuric acid cleanup procedure (SW-846 method 3665A) prior to analysis by GC/Electron Capture Detector (ECD). Additional cleanup procedure to remove sulfur may also be performed by SW-846 method 3660B if necessary. Method 8082 is specifically designed to analyze PCBs and requires the calibrations (initial and continuing) of Aroclors. This method is preferred because OLM04.2 specified in the QAPP is for the analyses of both pesticides and PCBs. Under OLM04.2, the instrument is calibrated to pesticides, not PCBs. To continue using OLM04.2 for PCB analysis only, modifications must be made to the analytical procedures. These modifications would model requirements found in SW-846 method 8082.

The data quality will not be affected by switching methods from OLM04.2 to SW-846 methods because all four STL facilities are certified through the National Environmental Laboratory Accreditation Program (NELAP) and have extensive experience with method 8082. The major benefit of using method 8082 for PCB analysis is the ability of using sulfuric acid to remove matrix interferences that may cause difficulties in identifying Aroclor patterns, thus minimizing potential false positive identifications.

Since SW-846 methods use performance-based control limits to monitor method efficiencies, this results in different QC limits being used by different laboratories. To ensure consistencies among the four different STL labs, all laboratories will be required to use the same set of quality control limits for this project. For example, all labs are to spike the same analytes to calculate accuracy and precision; and all labs must use the same QC limits to monitor method performances. Sherwin-Williams proposes the usage of the QC limits established in the current version of the Statement of Work (SOW) of the EPA Contract Laboratory Program (CLP), SOM01.1, as the project-specific control limits for PCB analysis. The Attachment 1 contains the QC limits and the PCBs to be analyzed by method 8082, as well as the respective quantitation limits and the applicable New Jersey Department of Environmental Protection (NJDEP) soil cleanup standards.

The laboratories will also be required to submit the CLP-type data deliverables so that full data validation, when necessary, can be performed.

EPA Method 524.2

Since groundwater from some of the residential wells is used for potable purposes, and the reporting limits listed in the QAPP for VOCs are higher than the Federal and New Jersey Drinking Water Standards (as of February 2005), Sherwin-Williams is requesting EPA's approval to use drinking water method 524.2 to analyze VOCs in groundwater collected from the residential wells.

These samples will be delivered to and analyzed by only one laboratory (STL-Edison) to maintain data consistency. An aliquot of 25 milliliters of the sample will be analyzed to

produce a reporting limit of 0.5 parts per billion (ppb) to satisfy the Federal and New Jersey Drinking Water Standards. The other analytical parameters will be analyzed by the same CLP methods as those collected during the Strategic Sampling Implementation Program.

Since only one laboratory will analyze the residential potable waters, the laboratory performance-based QC limits will be used to assess the data quality. The laboratory will be required to submit the CLP-type data deliverables so that full data validation, when necessary, can be performed. The Attachment 2 contains the VOCs from the 524.2 list that will be analyzed as well as the respective quantitation limit and Federal/State Drinking Water Standard.

PAHs

To maintain consistencies with semi-volatile organic data collected in 2005, the PAHs will be analyzed using OLM04.2. The Attachment 3 contains the QC limits and the PAHs to be analyzed, as well as the respective quantitation limits and the applicable NJDEP soil cleanup standards.

Attached please also find a compact disc containing laboratory standard operating procedures and NJDEP certifications pertinent to analyses by Methods 8082 and 524.2. Should you have any other recommendations or if you have any questions or comments, please do not hesitate to contact me at (216) 566-1794 or via e-mail at mlcapichioni@sherwin.com.

Sincerely,



Mary Lou Capichioni
Director Remediation Services

Attachments
Enclosure

cc: Hank Martin, ELM
Sally Jones, Weston
Steve Clough, Weston

ATTACHMENT 1

| Target Analytes by Method 8082 for Soil Samples | | | | | |
|---|------------------------------------|--|----------------------------|-----------------------------|----------------------------|
| Analyte | CLP SOW SOM01.1 CRQL (mg/kg) | Practical Quantitation Limit (mg/kg) | NJDEP RDCSCC (mg/kg) | NJDEP NRDCSCC (mg/kg) | NJDEP IGWSCC (mg/kg) |
| Aroclor-1016 | 0.033 | 0.067 | 0.49 | 2 | 50 |
| Aroclor-1221 | 0.033* | 0.067 | 0.49 | 2 | 50 |
| Aroclor-1232 | 0.033 | 0.067 | 0.49 | 2 | 50 |
| Aroclor-1242 | 0.033 | 0.067 | 0.49 | 2 | 50 |
| Aroclor-1248 | 0.033 | 0.067 | 0.49 | 2 | 50 |
| Aroclor-1254 | 0.033 | 0.067 | 0.49 | 2 | 50 |
| Aroclor-1260 | 0.033 | 0.067 | 0.49 | 2 | 50 |

Notes:

CLP SOW – Contract Laboratory Program Statement of Work

CRQL – Contract Required Quantitation Limit

NJDEP – New Jersey Department of Environmental Protection

RDCSCC – Residential Direct Contact Soil Cleanup Criteria

NRDCSCC – Nonresidential Direct Contact Soil Cleanup Criteria

IGWSCC – Impact to Groundwater Soil Cleanup Criteria

* The CRQL was 0.067 mg/kg by CLP SOW OLM04.2 which was used for soil sample analysis during the Strategic Sampling Implementation Program in 2005.

| Target Analytes by Method 8082 for Sediment Samples | | | |
|---|---------------------------------|--|--|
| Analyte | CLP SOW SOM01.1 CRQL (mg/kg) | Practical Quantitation Limit ⁽¹⁾ (mg/kg) | Ontario Lowest Effects Level ⁽²⁾ (mg/kg) |
| Aroclor-1016 | 0.033 | 0.017 | 0.007 |
| Aroclor-1221 | 0.033 ⁽³⁾ | 0.017 | --- |
| Aroclor-1232 | 0.033 | 0.017 | --- |
| Aroclor-1242 | 0.033 | 0.017 | --- |
| Aroclor-1248 | 0.033 | 0.017 | 0.030 |
| Aroclor-1254 | 0.033 | 0.017 | 0.060 |
| Aroclor-1260 | 0.033 | 0.017 | 0.005 |

⁽¹⁾ Provided by STL-Burlington which is designated for sediment sample analysis.

⁽²⁾ NJDEP *Guidance for Sediment Quality Evaluation*, November 1998 cites Ontario Ministry of Environment and Energy (OMEE). 1993. *Guidelines for the protection and management of sediment quality in Ontario*.

⁽³⁾ The CRQL was 0.067 mg/kg by CLP SOW OLM04.2 which was used for sediment sample analysis during the Strategic Sampling Implementation Program in 2005.

| CLP SOW SOM01.1 Surrogate Recovery Control Limits for Soil/Sediment Samples | |
|---|--------------|
| Surrogate | Recovery (%) |
| TCMX** | 30 – 150 |
| DCB | 30 – 150 |

** Optional. Method 8082 only requires DCB for Aroclor analysis.

| CLP SOW SOM01.1 Matrix Spike Control Limits for Soil/Sediment Samples | | |
|---|--------------|------|
| Analyte | Recovery (%) | RPD |
| Aroclor-1016 | 29 - 135 | < 15 |
| Aroclor-1260 | 29 - 135 | < 20 |

Note:

RPD – Relative Percent Difference.

ATTACHMENT 2

| Target Analytes by Method 524.2 | | | | | |
|---------------------------------|---|---|---|-------------------------|--|
| Analyte | CLP SOW OLM04.2 CROL (ug/L) | Laboratory Quantitation Limit (ug/L) | Federal and New Jersey State Drinking Water Standard (ug/L) | NJDEP GWQS (ug/L) | Laboratory Blank Spike Recovery** (%) |
| Dichlorodifluoromethane | 10 | 0.5 | — | 1000 | 70 – 130 |
| Chloromethane | 10 | 0.5 | — | — | 70 – 130 |
| Vinyl Chloride | 10 | 0.5 | 2 | 1 | 70 – 130 |
| Bromomethane | 10 | 0.5 | — | 10 | 70 – 130 |
| Chloroethane | 10 | 0.5 | — | — | 70 – 130 |
| Trichlorofluoromethane | 10 | 0.5 | — | 2000 | 70 – 130 |
| 1,1-Dichloroethene | 10 | 0.5 | 2* | 1 | 70 – 130 |
| Methylene Chloride | 10 | 0.5 | 3* | 3 | 70 – 130 |
| Trans-1,2-Dichloroethene | 10 | 0.5 | 100 | 100 | 70 – 130 |
| 1,1-Dichloroethane | 10 | 0.5 | 50* | 50 | 70 – 130 |
| Cis-1,2-Dichloroethene | 10 | 0.5 | 70 | 70 | 70 – 130 |
| Chloroform | 10 | 0.5 | — | 70 | 70 – 130 |
| 1,1,1-Trichloroethane | 10 | 0.5 | 30* | 30 | 70 – 130 |
| Carbon Tetrachloride | 10 | 0.5 | 2* | 1 | 70 – 130 |
| Benzene | 10 | 0.5 | 1* | 1 | 70 – 130 |
| 1,2-Dichloroethane | 10 | 0.5 | 2* | 2 | 70 – 130 |
| Trichloroethene | 10 | 0.5 | 1* | 1 | 70 – 130 |
| 1,2-Dichloropropane | 10 | 0.5 | 5 | 1 | 70 – 130 |
| Bromodichloromethane | 10 | 0.5 | — | 1 | 70 – 130 |
| Cis-1,3-Dichloropropene | 10 | 0.5 | — | 1 | 70 – 130 |
| Toluene | 10 | 0.5 | 1000 | 1000 | 70 – 130 |
| Trans-1,3-Dichloropropene | 10 | 0.5 | — | 1 | 70 – 130 |
| 1,1,2-Trichloroethane | 10 | 0.5 | 3* | 3 | 70 – 130 |
| Tetrachloroethene | 10 | 0.5 | 1* | 1 | 70 – 130 |
| Dibromochloromethane | 10 | 0.5 | — | 1 | 70 – 130 |
| 1,2-Dibromomethane | 10 | 0.5 | — | — | 70 – 130 |
| Chlorobenzene | 10 | 0.5 | 50* | 50 | 70 – 130 |
| Ethylbenzene | 10 | 0.5 | 700 | 700 | 70 – 130 |
| Xylene (total) | 10 | 0.5 | 1000* | 1000 | 70 – 130 |
| Styrene | 10 | 0.5 | 100 | 100 | 70 – 130 |
| Bromoform | 10 | 0.5 | — | 4 | 70 – 130 |
| Isopropylbenzene | 10 | 0.5 | — | 700 | 70 – 130 |
| 1,1,2,2-Tetrachloroethane | 10 | 0.5 | 1* | 1 | 70 – 130 |
| m-Dichlorobenzene | 10 | 0.5 | 600* | 600 | 70 – 130 |
| p-Dichlorobenzene | 10 | 0.5 | 75 | 75 | 70 – 130 |
| o-Dichlorobenzene | 10 | 0.5 | 600 | 600 | 70 – 130 |
| 1,2-Dibromo-3-chloropropane | 10 | 0.5 | — | 0.02 | 70 – 130 |
| 1,2,4-Trichlorobenzene | 10 | 0.5 | 9* | 9 | 70 – 130 |
| MTBE | 10 | 0.5 | 70* | 70 | 70 – 130 |
| Acetone | 10 | 2.5 | — | 6000 | 70 – 130 |
| 2-Butanone | 10 | 2.5 | — | 300 | 70 – 130 |
| 4-Methyl-2-pentanone | 10 | 2.5 | — | — | 70 – 130 |
| 2-Hexanone | 10 | 2.5 | — | — | 70 – 130 |
| Carbon Disulfide | 10 | 2.5 | — | 700 | 70 – 130 |

* N.J. MCL [A-280]

** The Relative Percent Difference (RPD) between blank spike and blank spike duplicate must be ≤ 40 .

CLP – Contract Laboratory Program

SOW – Statement of Work

NJDEP – New Jersey Department of Protection

GWQS – Groundwater Quality Standard; higher of practical quantitation limit and groundwater quality criterion

ATTACHMENT 3

| Target Analytes of Polycyclic Aromatic Hydrocarbons (PAHs) for Soil/Sediment Samples | | | | |
|--|---|---|--|---|
| Analyte | CLP SOW OLM04.2 CRQL ⁽¹⁾ (mg/kg) | NJDEP RDCSCC ⁽²⁾ (mg/kg) | NJDEP NRDCSCC ⁽²⁾ (mg/kg) | NJDEP IGWSCC ⁽²⁾ (mg/kg) |
| Acenaphthene | 0.33 | 3400 | 10000 | 100 |
| Acenaphthylene | 0.33 | — | — | — |
| Anthracene | 0.33 | 10000 | 10000 | 100 |
| Benzo(a)anthracene | 0.33 | 0.9 | 4 | 500 |
| Benzo(a)pyrene | 0.33 | 0.66 ⁽³⁾ | 0.66 ⁽³⁾ | 100 |
| Benzo(b)fluoranthene | 0.33 | 0.9 | 4 | 50 |
| Benzo(k)fluoranthene | 0.33 | 0.9 | 4 | 500 |
| Benzo(ghi)perylene | 0.33 | — | — | — |
| Chrysene | 0.33 | 9 | 40 | 500 |
| Dibenz(a,h)anthracene | 0.33 | 0.66 ⁽³⁾ | 0.66 ⁽³⁾ | 100 |
| Fluoranthene | 0.33 | 2300 | 10000 | 100 |
| Fluorene | 0.33 | 2300 | 10000 | 100 |
| Indeno(1,2,3-cd)pyrene | 0.33 | 0.9 | 4 | 500 |
| Naphthalene | 0.33 | 230 | 4200 | 100 |
| Phenanthrene | 0.33 | — | — | — |
| Pyrene | 0.33 | 1700 | 10000 | 100 |

Notes:

CLP SOW – Contract Laboratory Program Statement of Work

CRQL – Contract Required Quantitation Limit

NJDEP – New Jersey Department of Environmental Protection

RDCSCC – Residential Direct Contact Soil Cleanup Criteria

NRDCSCC – Nonresidential Direct Contact Soil Cleanup Criteria

IGWSCC – Impact to Groundwater Soil Cleanup Criteria

⁽¹⁾ On a wet-weight basis; the actual quantitation limit will be adjusted by the sample moisture content.

⁽²⁾ Last Revised 5/12/1999

⁽³⁾ Health based criterion is lower than analytical limits; cleanup criterion based on practical quantitation level.

| CLP SOW OLM04.2 Surrogate Recovery Control Limits for Soil/Sediment Samples | |
|---|---------------------|
| Surrogate | Recovery (%) |
| Nitrobenzene-d5 | 23 – 120 |
| 2-Fluorobiphenyl | 30 – 115 |
| Terphenyl-d14 | 18 – 137 |
| 1,2-Dichlorobenzene-d4 | 20 – 130 (advisory) |

| CLP SOW OLM04.2 Matrix Spike Control Limits for Soil/Sediment Samples | | |
|---|--------------|------|
| Analyte | Recovery (%) | RPD |
| N-Nitroso-di-n-propylamine | 41 – 126 | < 28 |
| Acenaphthene | 31 – 137 | < 19 |
| 2,4-Dinitrotoluene | 28 – 89 | < 47 |
| Pyrene | 35 – 142 | < 36 |

Note:

RPD – Relative Percent Difference.

1. The parameter list for this site is the TCL. All method requirements must be followed for these compounds.
2. All samples are to be analyzed within holding times:
 - 7 days if sample is not preserved
 - 14 days if sample is preserved
3. Sample batch is 20 samples maximum
4. Detection limit determination must be performed for all analytes prior to start of sample collection. The lab must use the MDL determination procedures stated in Section 10.3 of M524.2. All results must be provided to this office. Include (for each analyte): concentration spiked (all compounds shall be 1 $\mu\text{g/L}$, except ketones/aldehydes which shall be 5 $\mu\text{g/L}$ and methylene chloride which shall be 2 $\mu\text{g/L}$) into blank water concentrations obtained for each of 2 or more replicates, standard deviation, mean conc. of replicates, and the student t value used in the calculation. This information must be provided to enable the reviewer to regenerate the lab's calculation of the detection limit.
5. At a minimum, a five point initial calibration must be performed. It has been shown that the five concentrations following often yield results which meet the required QC criteria: 4, 10, 20, 30 and 40 p-q/li. The lab may use these or may extend their calibration range, however, all QC criteria must be adhered to for each analyte.
6. The continuing calibration standard must be analyzed prior to sample analysis and once per 12 hours in order to verify a valid initial calibration. Use the % Difference criteria specified in M524.2 Section 9.3.5, which, is $\leq 30\%$ difference. If these conditions do not exist, Corrective action must be taken which may require re-initial calibration.
7. A laboratory fortified blank at a concentration of 1 $\mu\text{g/L}$ (5 $\mu\text{g/L}$ for ketones/aldehydes and 2 $\mu\text{g/L}$ for methylene chloride) for each analyte must be analyzed immediately following each continuing calibration. All analytes must be detected by the GC/MS automated data system. Submit spectra for all analytes. If this detection cannot be achieved, the problem must be located and corrected, then the instrument must be recalibrated prior to sample analysis.
8. The MS tune must be verified at the beginning of each 12 hour period of analysis and all samples must be run within this 12 hour period.

**Method 524.2 - VOAs in Water by Capillary Column
GC/MS Additional QC Requirement**

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9. A lab reagent blank must be analyzed prior to the samples and shown to be free of contamination. Failure to obtain method blank values less than 1 µg/L (5 µg/L for ketones/aldehydes and 2 µg/L for methylene chloride) requires that all samples prepared with that method blank be reprepared and reanalyzed for the affected parameters.
10. All samples, blanks, duplicates, and calibration standards must be spiked with the surrogates and internal standard compounds stated in Section 7.5.1 of M524.2 at the specified concentrations or with the surrogates and internal standards specified in the appropriate CLP SOW or SW 846 Method
11. The primary and secondary ions listed in the current CLP SOW or SW-846 VOC Method must be used for identification of the TCL parameters not listed in Method 524.2.
12. A laboratory generated mass spectrum must be provided for all compounds detected above and below the detection limit for all samples and laboratory fortified blanks.
13. All calibration and analytical procedures given in M524.2 whether presented as optional or required, must be followed.
14. Up to ten volatile compounds (not on the TCL) of greatest apparent concentration shall be tentatively identified via a forward search of the NIST/EPA/MSDC mass spectral library as described in the current CLP SOW or SW-846 VOC Method. Only tentatively identified compounds (TICs) with a peak area \geq 40% of the nearest internal standard are to be reported.
15. If the EPA RPM wishes HWSS to audit a certain percentage of the data validation effort of the PRP contractor, an EPA-CLP type deliverables package must be made available. This will also include a detailed example calculation that clearly demonstrates the manner in which the final results were derived. Where applicable, each component of the calculation must be explained (e.g. if the calculation includes a dilution factor, it must be clear how and why each dilution occurred). The laboratory must supply any and all information required to reproduce, during an EPA data validation, all results reported.